Quarterly Journal of the
Central States Numismatic Society

the sentinel

Fall 1995
Volume 43, Number 3

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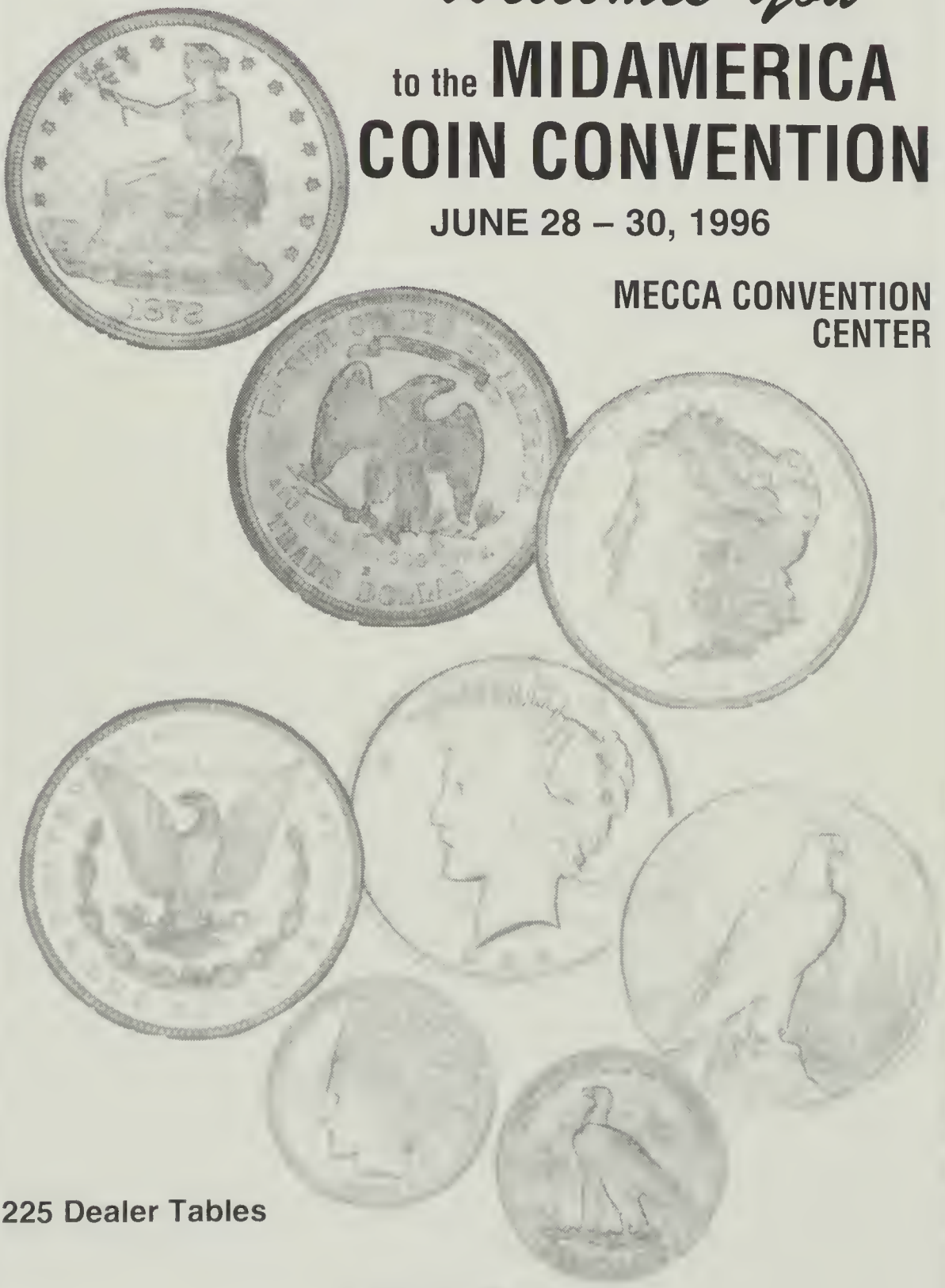

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VOL. 43, NO. 3 FALL, 1995

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Presidential Commentary

Kevin Foley

I've received a number of letters from members in recent weeks questioning the Board's decision to continue Professional Numismatists Guild Day in light of the membership survey taken this past Spring indicating a roughly 2-1 margin of the membership favored discontinuing this tradition.

As President of your organization, I feel an obligation to respond to the questions raised by these inquiries. As those of you who discussed the matter with me personally, and there were many of you, are aware I also would have opted to discontinue PNG Day. While a majority of the membership shared this view, a majority of the Board did not. When one disagrees with others it is sometimes easier if the opposition can be portrayed as somehow being part of a venal cabal. In this instance, this is not the case. The majority of the Board on this issue simply see the matter from a different perspective than those other Board members and the majority of the membership who share my views on this matter.

Under our governing documents the decision on this matter rests with the Board. Until such time as the Board membership changes, my position on this issue is likely to remain in the minority.

As President, I have been directed by the Board to conduct discussions with the PNG leadership to reform PNG Day in a manner which will address the fundamental concerns of the members who voted to discontinue it. These concerns relate primarily to two issues: first, stricter enforcement of the invitation system for admission to PNG Day; and second, an expansion of the Thursday setup hours available to the booth holders at the CSNS Convention proper. By the time you read this message the issue will likely have been resolved and a reformed structure for PNG Day put in place by the Board at our September meeting in Fort Mitchell, Kentucky.

Whether I agree with the majority of my colleagues on the Board on this question or not, I know that they have approached the matter based on a genuine concern for the welfare of our organization. I also believe that the consideration of this issue and especially the membership survey which was a part of this consideration have served to strengthen CSNS by leading to greater involvement of the membership in the decision making process.

Please bear in mind that the call for nominations appears in this issue of *The Centinel* for the election to seat a new Board at our Anniversary Convention in Kansas City next Spring. There is no better context to debate the issues which are of concern to us as CSNS members than the electoral process. I know we have a much higher proportion of members than many organizations who are concerned and want to have an active role in CSNS. The upcoming election will be your chance to step forward and let the other members judge your views through their votes.

Kevin Foley
President

Call For Nominations

Article III, Section 5, of the Bylaws of Central States Numismatic Society provides that the President shall make a call for nominations of Officers in the Fall issue of *The Centinel*. All nominations must be made in writing and must be made by a regular or life member in good standing of the Society. Such nominations should be sent only to the Secretary of the Society, Jerry Lebo, P.O. Box 44337, Indianapolis, IN 46244.

Any member in good standing may seek election to any office except that of President, which must be filled by a member who has served previously as an officer or governor. The President may not be a candidate for re-election to that office and no member may nominate himself or herself. All nominations should be submitted no later than November 1, 1995.

A report of nominations will be made in the Winter, 1995 issue of *The Centinel* and will include biographies of those members who accept nomination.

The Central States Numismatic Society has become one of the foremost numismatic organizations in the country only through the dedicated efforts of members who have been willing to work on behalf of and contribute to the Society. One meaningful way in which a member can render service to the Society is by holding office on the Board of Governors. I urge every member to consider and nominate those whom they feel would be well qualified to serve and guide your Society over the next two years.

Pursuant to Article III, Section 5, of the Bylaws of the Central States Numismatic Society, I hereby make an official call for nominations.

Kevin Foley
President

Future CSNS Conventions

1996—April 25–28 . . . . . .Kansas City, Missouri
Ralph Hardman 913/649-5633
1997—April 10-13 . . . . . .Indianapolis, Indiana
1998 . . . . . .St. Louis, Missouri
1999—April 22–25 . . . . . .Milwaukee, Wisconsin

NOTE TO CLUB OFFICIALS

Interested in hosting a future CSNS Convention? It is not too early to begin thinking of the future! Submit your letter of invitation to the CSNS Secretary-Treasurer at your earliest convenience. Your request will receive the prompt attention of the Officers and Board of Governors.

A Message from the Secretary

Jerry Lebo

Congratulations are in order for our CSNS vice president and our editors, as well as six other members.

In case you haven't heard, VP John Wilson won election to the American Numismatic Association's Board of Governors, one of seven individuals accorded that honor by the ANA membership. In fact, five of the other six are also CSNS members: Helen Carmody, Scott Travers, J.T. Stanton, Gary Lewis and Will Rossman. Anthony Swiatek, the new ANA vice president, is also a member of our society.

Editors Jim and Karen Jach are to be congratulated for their work on our quarterly publication, *The Centinel*, which won first place in the ANA's Regional Club Publications contest this year. It's the third straight year that our Milwaukee duo has captured honors in the ANA competition, but the initial time for the coveted first-place honor.

A round of applause, please, for these hard working individuals.

It's election time again. Elsewhere in this issue of *The Centinel* you'll find the president's call for nominations, so pay close attention to the following if you're going to be a candidate for the board.

First, you must be nominated prior to Nov. 1 by another CSNS member. Be sure the other person is a member in good standing (as well as yourself). The membership roster was purged Sept. 1 of people who didn't pay their dues.

As soon as I receive your nomination, I will notify you in writing, asking for acceptance or rejection. You have until Dec. 1 to accept nomination. Your acceptance must be in my hands by that date. There is no waiver of this rule. You're also entitled to have a brief biography published in *The Centinel* that is distributed early in January. However, because of printing deadlines, only biographies received by Nov. 15 will be guaranteed space in *The Centinel*. Consequently, you shouldn't delay until the 11th hour.

The bylaws state biographies should be limited to 200 words, but that provision has been waived pretty much in recent years. 200 words translates into only about 20 lines of typed copy. Still, lengthy biographies might get trimmed, depending upon available space in *The Centinel*.

Our last election produced contested races for president, vice president (two candidates each) and the board of governors. There were 21 candidates for 13 governors' seats. The bylaws have since been amended to reduce the number of governors' positions to 10. Still, don't be discouraged from running because there are fewer seats.

Election ballots will be mailed in early February. Only ballots received by April 7 will be counted. Candidates will be listed on the ballot in the order their nominations were accepted.

Meanwhile, our previous issue included the annual treasurer's report, which was published in *The Centinel* for the first time, at least in recent years. These reports have always been available at the annual general membership meeting, but few people have bothered to pick up a copy.

The bottom line figure showing total assets would indicate CSNS is a healthy organization, financially speaking. Well, yes and no. A heavy portion of that money is tied up in life membership accounts. In theory at least, the principal of these accounts can't be touched. Only the interest is funnelled into the general account.

That's a fairly common practice among organizations such as ours in which money paid for life memberships is set aside to support the costs of maintaining those memberships. Interest on the current accounts generates a little more than $8 per life member per year, which is approximately the same amount of dues paid by regular members.

In neither case does this $8 income support the total cost of operating the organization for a year. That figure is closer to $25 per member. The rest of the needed revenues come from our annual conventions, auction fees and miscellaneous other sources, including advertising in *The Centinel.*

You can see by reviewing the report that well over half of the revenues came from conventions. If a convention fails to generate sufficient profits, CSNS has a major problem. A textbook example of this scenario occurred when the 1993 Rosemont spring convention in suburban Chicago generated only about $9,000 in profits to CSNS. The organization's total assets figure dropped drastically, from more than $100,000 in 1992 to less than $78,000 a year later.

So while CSNS has a substantial sum in life membership accounts, the remaining operating money is not quite so abundant. It's not exactly like living from paycheck to paycheck, but then it's not all that far removed, either.

Incidentally, the bottom figure in the report, or total assets, which was listed at $88,984.43, has been adjusted upward to $93,709. This reflects the true market value of Items 3 and 4, which are two U.S. Treasury investments whose interest feeds back onto the principal. In other words, we've declared the interest paid to date as income and paid the appropriate taxes on it to avoid a major tax bite when these items mature in 2000 and 2002, respectively.

Special thanks to Harry Tileston for looking over my shoulder on these financial matters. Harry, of course, is a member of the treasury oversight committee. Harry's insights on oversight have been most salubrious.

A footnote to our Milwaukee convention: The Ogden Food Services Co., which caters the MECCA convention center, is to be commended for its ethics. We paid Ogden more than $150 to provide coffee, soft drinks, etc., for our Saturday board meeting. Ogden somehow got fouled up and failed to have the beverages in place at the appointed time. After some prompting, Ogden got the items in place but decided we shouldn't have to pay for its mistake, even though the goods were delivered belatedly. Ogden issued a refund check for the entire amount. Ogden certainly can use me as a reference if it ever bids on concession business in Indianapolis.

It's not too early to start thinking about CSNS '96 in Kansas City. Former CSNS President Ralph Hardman is heading up the effort. I note that the security chairman is John Cain, another former CSNS president. We're in good hands in KC.

Incidentally, bourse applications have been mailed. If you are expecting one and haven't received same, please call Ralph at 913-649-5633.

Finally, thanks to former ANA President David Ganz for honoring me with one of his Presidential Awards. Fellow Hoosiers Howard Linville, Dave Rasor and Marv Mericle (the latter a CSNS governor) also received the honor this past June. George Courtesis, Indiana State's long-time treasurer, received one a year ago. ANA Past-President Ken Hallenbeck presented the awards during one of his pilgrimages to his former state of Indiana.

—Jerry Lebo
Secretary-Treasurer

In Memoriam

The Board and membership of the Society join in extending our heartfelt condolences to the family and friends of the following members who passed away recently.

R 4324 R.H. Norweb, Jr. . . . . .Cleveland, OH
R 6345 Steve Koelbl . . . . . La Crosse, WI

Membership Applications

The persons named below have applied for membership in the Society. Each applicant will become a member in 30 days, unless a written objection to his or her application is received by the Secretary-Treasurer prior to that date.

REGULAR MEMBERS

7238 Louis DiLauro . . . . . .Bradenton, FL
7239 C. Keith Edison . . . . . .Mondovi, WI
7240 Bradley S. Ream . . . . . .Rockville, IN
7241 Eloise A. Ullman . . . . . .McLean, VA
7242 Donald S. Higgins . . . . . .Bentonville, AR
7243 Rey T. Bueno . . . . . .Baguio, Philippines
7245 Mark McWherter . . . . . .Olathe, KS
7246 Rex Phillips . . . . . .Chanute, KS
7247 Phil Martinez . . . . . .Wellington, KS
7248 Linda Martinez . . . . . .Wellington, KS
7250 John Whitworth . . . . . .Lincoln, NE

JUNIOR MEMBERSHIP

7237 Travis Vathauer . . . . . .Clay Center, KS
7249 Brian J. Thorson . . . . . .Howard Lake, MN

LIFE MEMBERSHIP

588 Vasilios K. Seremetis . . . . . .Morgantown, WV
589 Bob Johnson . . . . . .Maitland, FL

LOST MEMBERS

Can you help the secretary find them?

David S. Dearborn . . . . . .North Platte, NE
Robert Hambleton . . . . . .Alexandria, VA
Greg Holloway . . . . . .Blue Bell, PA
Philip Mancuso . . . . . .Hammonton, NJ
Jeffrey Morris Notrica . . . . . .Atlanta, GA
James W. Sego . . . . . .Naperville, IL

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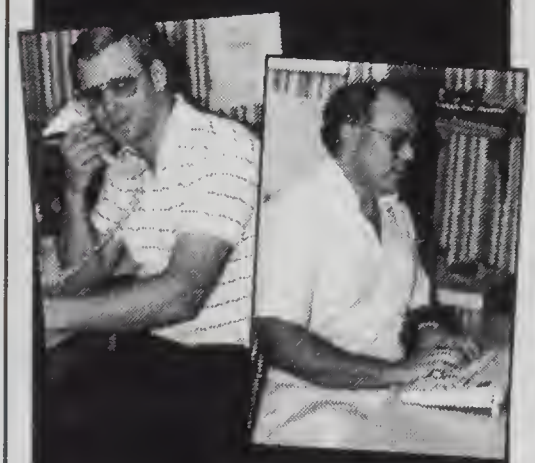

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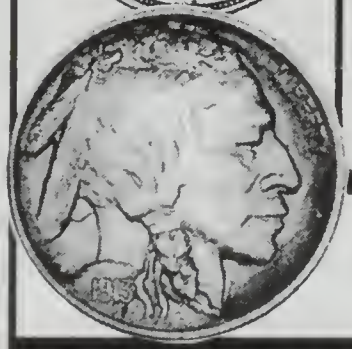

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Recent Chemical Studies on Ancient and Medieval Armenian Coins Using SEM-EDS

by Leon A. Saryan, Ph.D.

What can be learned from the chemical analysis of an ancient coin or artifact? If the specimen to be studied is carefully selected and the limitations of the data are understood, the answer seems to be that quite a lot of useful and valid information can be obtained, often without damage to the object in any fashion.

Metallic composition is one of the principal facts about a coin. This information can help elucidate ancient metallurgical and coining practice, provide evidence of authenticity, and enable us to understand changes suffered by coins after centuries of burial. If these questions, which have theoretical as well as practical interest, can be approached in a totally non-destructive fashion, it might be possible to gain new insights and still preserve a specimen intact for posterity.

Scientific researchers, of course, have several traditional and high-tech analytical techniques at their disposal which can provide reliable information about a coin's metallic content. For many collectors, however, the first priority is that the analysis be carried out without subjecting the coin to any alteration whatsoever, either during sample preparation or actual testing. This cannot be achieved with many techniques.

A few years ago, I was asked to prepare a review of chemical studies of ancient coinage[1] and at the same time I wrote a parallel study concentrating on the ancient and medieval coinage of Armenia[2]. Both of these studies were well-received, and I began to investigate the possibility of conducting more extensive studies.

RESEARCH QUESTIONS

Shortly afterward, I reeived an inquiry from Nebraska numismatist Robert Kutcher, who had read my article on the chmistry of Armenian coinage. He owned some medieval Armenian silver trams that looked for all the world as if they were silver-plated over a copper core. Since plated trams had never been documented in numismatic literature, Kutcher asked me to undertake a chemical analysis to ascertain the composition and structure of his coins.

From California, my colleague Yeghia Nercessian sent a strange takvorin of King Levon III of Cilician Armenia (1301-1307 AD) from his collection that appeared to be struck in or plated with copper, rather than the usual silver. The design and dimensions of this coin appeared authentic, but there was no apparent explanation for its copper coating.

Besides these, I wanted to check a few coins from my personal collection. Two of these were previously cleaned Armenian trams. Another was an ancient bronze coin of Tigranes the Great with a freshly exposed metal edge. Most of all, I was anxious to see if a non-destructive analytical technique could provide information of sufficient reliability to prove useful to collectors and researchers.

THE SEM-EDS METHOD

One modern analytical technique which can be applied very directly to small metallic artifacts is known as scanning electron microscopy with energy dispersive X-ray

spectrometry, or SEM-EDS. In this procedure, a tiny area on the surface of a coin may be studied with no alteration or change during the procedure. The specimen is simply removed from its storage envelope and inserted into the vacuum chamber of a specially equipped scanning electron microscope. Within a few minutes, a computer printout of the elemental profile of the coin can be in your hands.

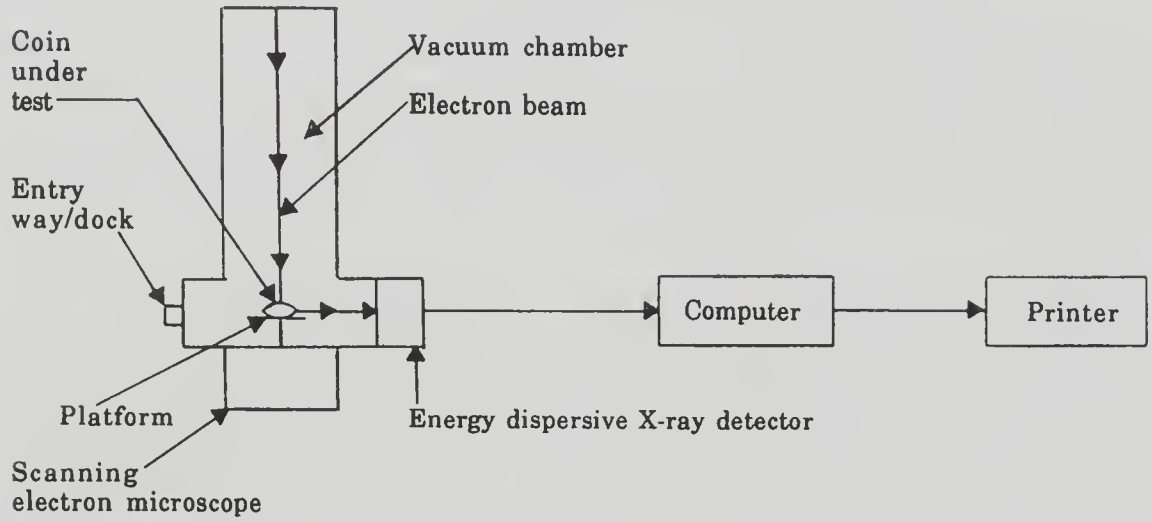
Although this sounds easy enough, it is definitely not a pastime for amateurs. A new, state-of-the-art SEM-EDS setup can cost over $200,000, not to mention the expense of equipping a laboratory, maintenance, spare parts, staff salaries and education, etc. Consequently, analyses are charged at about $100 per test, and must be performed by highly trained and experienced personnel. Nevertheless, since the possibility for non-destructive analysis of coin metal seemed there, I decided to investigate this technique in more detail.

Every analytical procedure has its limitations, and SEM-EDS is no exception. First of all, SEM-EDS is a surface procedure which probes the composition of a sample to a depth of just a few micrometers. If the object carries surface contaminants remaining from soil, corrosion, oxidation, or cleaning agents, or if the interior composition is much different than the surface, misleading readings and erroneous conclusions can result. Second, it only detects elements above atomic number 10, which leaves out carbon, oxygen, and nitrogen, although this can be circumvented somewhat using special attachments. Third, only fairly small objects (coins and small jewelry) can be admitted in their entirety into the instrument chamber. Larger objects must be divided into smaller pieces. Fourth, quantitation is accurate only to approximately the nearest 0.1%, which leaves out of consideration trace impurities in the part per million range.

With a good strategy, however, it may be possible to overcome these limitations. For example, fresh metal in the interior of a coin (perhaps only minimally affected by surface corrosion, oxidation or contamination) may have been revealed by a scrape made through the patina at the time of discovery. Damaged or mutilated coins which have little value as collectible specimens can still provide important information to numismatic science. A coin which has been cleaned to make it readily marketable will have had surface contaminants substantially removed, and may provide a fairly accurate analytic result. Some knowledge of ancient metallurgical practice and the intended alloy composition of a sample (perhaps from previous destructive or semi-destructive testing) may enable the analyst to decide which elements probably derive from exogenous contamination, and which are inherent to the original alloy. In such cases it might be possible to correct the data to account for the contamination. It should be noted that if the coin is severely corroded, partial or complete destruction may be required to obtain an accurate analysis, regardless of the analytical method used.

In SEM-EDS, a metal sample is introduced directly into the vacuum chamber of the scanning electron microscope and oriented in the electron beam. First, an image of the sample is obtained by collecting scattered low-energy electrons generated by the collision of the primary electron beam with the sample. The size of the area being surveyed can be varied several fold; for high resolution imaging it can be restricted to as little as two square nanometers. This makes it possible to select very small areas for detailed study. The scattered electrons are detected and processed using a computer to generate a high definition topographical image of the surface of the sample with its relief, contaminants, abrasions, and inclusions. A second result of the collision of the primary beam with the sample is the generation of X-rays within the atoms comprising the sample. These X-rays are measured using a special energy dispersive spectrometer attached to the vacuum chamber. The energies of these X-rays will be characteristic of

the atoms from which they are generated, and will be formed in proportion to the abundance of those atoms in the sample. With computer processing, an accurate estimate of the chemical composition of a small area of the surface of a sample (to a depth of one to two microns) can be obtained, including any specific inclusions, impurities, or adhering particles.



Schematic diagram of SEM-EDS coin analysis *(drawing courtesy of Y.T. Nercessian)*

Armed with this information, I contacted Robert Dragen, an experienced electron microscopist and metallurgist, for assistance with these investigations. Over a period of several months I brought him samples and questions, and with his expert assistance and sophisticated instrumentation, we were able to obtain some interesting and useful data[3].

EARLIER STUDIES ON ARMENIAN COINAGE

It might be helpful to summarize what is already known about the metal content of medieval Armenian coins. Prior to Dr. Paul Bedoukian's definitive *Coinage of Cilician Armenia*[4], we could only speculate based on a coin's visual appearance. Bedoukian performed specific gravity tests on about 200 silver coins of the Cilician Armenian kings, demonstrating that from about 1200 to 1375, fineness of Armenian silver coinage declined gradually as political and economic conditions deteriorated.

In 1979, D.M. Metcalf of Oxford's Ashmolean Museum published an important study using X-ray fluorescence isoprobe analysis. The edges of 34 silver coins were thoroughly abraded with emery cloth, and successive readings were taken until consistent results were obtained[4]. These studies provided details of the composition of the coinage of Levon I (1198-1219) and his successor Hetoum I. It is noteworthy that medieval refining procedures for silver invariably left traces of gold and lead in the metal. Both metals occur in ores; during refining, most but not all of the lead is removed, while gold remains behind in its entirety. The level of gold is thus characteristic of the ore from which the silver was derived, while the level of lead should reflect the efficiency of the refining process. Metcalf found that the coinage of these two kings contained an average of about 92.5% silver, 1.1% lead, and 0.5% gold overall. Most of the remainder was copper.

ANALYSIS OF ARMENIAN SILVER TRAMS BY SEM-EDS

To illustrate the applicability of SEM-EDS to early coinage, I began with a study of two silver coins which had been cleaned prior to entering my collection. One of these was a tram of Levon I, and the other a tram of Hetoum I. The coins were removed from

their storage envelopes and placed into the SEM-EDS instrument without any alteration whatsoever. A single surface reading taken on each coin (Table I) shows that both contain silver, copper, lead, and gold in approximately the expected proportions. In addition, traces of aluminum, silicon, sulfur, phosphorus, and chlorine are present. These latter elements are not likely to be components of the original alloy, but instead probably reflect traces of soil contamination and corrosion remaining on the coin surface. If this is the case, the results can be expressed to indicate the relative proportions of silver, copper, lead, and gold only (Table I). The slightly higher than expected level of silver in the Levon I tram may be an experimental or statistical aberration, or could be the result of selective removal of copper from the surface of the coin during cleaning.

Silver tram of Levon I of Cilician Armenia (1198-1219) similar to that studied using SEM-EDS

TABLE I.

Surface analyses of two cleaned Armenian silver trams as received
(weight percent by SEM-EDS)

Metal	Levon I AR Tram	Hetoum I AR Tram
Silver	94.5	90.4
Copper	1.5	5.1
Lead	1.0	1.0
Gold	1.0	1.2
Aluminum	0.2	0.1
Silicon	0.6	0.7
Phosphorus	0.2	0.4
Sulfur	0.3	0.9
Chlorine	0.8	0.2

Above analyses adjusted for presumed original alloy components.

Metal	Levon I AR Tram	Hetoum I AR Tram
Silver	96.4	92.5
Copper	1.6	5.3
Lead	1.0	1.0
Gold	1.0	1.2

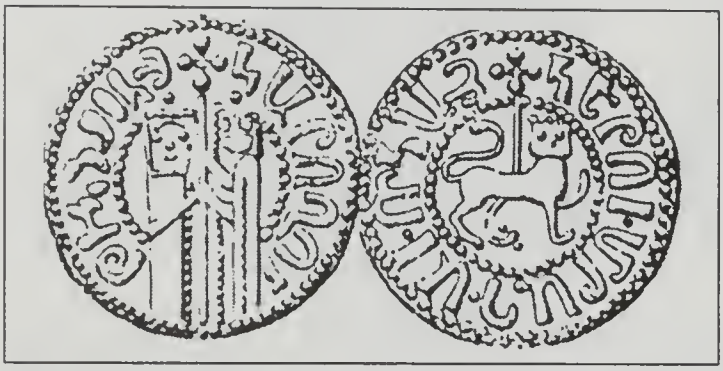
Obviously, a careful and detailed study would require more coins and more measurements. Nevertheless, this analysis demonstrates that SEM-EDS applied non-destructively on cleaned silver coins can provide results which correspond closely to a method that utilizes thorough abrasion of the coin edges.

SEM-EDS ON AN UNCLEANED ARMENIAN TRAM

Inhomogeneity and contamination represent common pitfalls in any type of surface analysis. Besides traces of soil and cleaning agents, microscopic and even macroscopic alloy inclusions are possible on early coins. Results may also vary from normal statistical and instrument fluctuations. Deposits of foreign matter may be the source of very pronounced variation even for adjacent areas on the same coin surface.

This is illustrated by findings from a genuine Hetoum I silver tram generously offered for study by Mr. Kutcher. This 3.11 gram coin was analyzed as received. There was no evidence of prior cleaning; surface deposits were present in the crevices, and the coin exhibited a strong blue-purple-gray discoloration suggesting chemical interaction of the coin surface with the environment.

Two areas on this coin were selected for study, one in a crevice which retained traces of soil and corrosion, and another on an adjacent raised surface where loose deposits had long since rubbed away (Table II). Clearly, the crevice area shows a much higher proportion of silicon (probably originating from soil) and chlorine (probably from corrosion and reaction with silver) than the raised surface. The relative proportion of silver in the crevice thus appears very much reduced. This data tells us little about the original alloy of this coin, but a lot about the surface changes it has undergone over the intervening centuries. It also underscores the importance of taking multiple readings on a surface to check for sampling inconsistency.



Silver tram of Hetoum I and Zabel of Cilician Armenia (1226-1270) similar to those studied in this article

TABLE II.

Composition of adjacent areas of a genuine uncleaned Hetoum I tram (weight percent by SEM-EDS)

Metal	Area in Crevice	Raised Surface Area
Silver	46.3	84.0
Copper	6.8	5.9
Lead	5.5	1.0
Gold	0.6	0.0
Aluminum	2.0	0.3
Silicon	13.6	1.4
Phosphorus	1.2	0.0
Sulfur	1.6	0.6
Chlorine	13.8	6.0
Calcium	5.4	0.5
Titanium	0.2	0.0
Iron	3.1	0.3

SECTIONED ARMENIAN TRAMS BY SEM-EDS

Kutcher's tram originated from a hoard of several hundred genuine pieces. In the same group there were a few coins found that appeared to have white metal flaking from their surfaces. Immediately beneath was a granular black layer, which when scratched revealed a slightly reddish metal underneath. The coins thus seemed to be plated with

silver or tin over a core of copper. A plausible scenario was proposed whereby plated coins could have been struck by the Armenian mint at a period of economic distress. This was obviously an important discovery, since plated medieval Armenian coins are not mentioned in numismatic literature. Mr. Kutcher was generously willing to sacrifice the coin analyzed above (as a genuine control) and one apparently plated coin to ascertain their interior alloy composition and structure.

This second coin (weight 2.57 grams) was likewise uncleaned and had strong discoloration. SEM-EDS readings taken where the surface layer had fallen away did not indicate a significantly increased proportion of copper, so it was decided to compare the two coins by exposing and testing their interior metal.

Using a special saw, a small metal wedge was cut from the edge of each coin and embedded in plastic, revealing a cross section of metal representative of the original alloy. Readings were obtained at three precise depths into each coin: near an outer face, halfway to the center, and at the center. The metal composition is consistent at various depths into each coin and between the two coins studied (Table III). Furthermore, they agree almost exactly with the composition predicted from earlier studies. The obvious conclusion is that the allegedly "plated" coin is actually composed of good silver and is virtually indistinguishable from genuine examples.

TABLE III.

Analysis of freshly exposed interior metal on genuine and "plated" Hetoum I Trams (mean percent ± SD of three SEM-EDS readings)

Metal	genuine tram	"plated" tram
Silver	92.60 ± 0.46	92.67 ± 0.51
Copper	5.17 ± 0.12	5.57 ± 0.78
Lead	1.37 ± 0.64	1.10 ± 0.17
Gold	0.83 ± 0.15	0.60 ± 0.36
Iron	0.03 ± 0.06	0.06 ± 0.11

It is also worth noting that the contaminants seen on coin surfaces are not present in the interior metal in significant quantity. The original alloy consists of the four principal components in approximately their expected abundances, and sampling error from area to area (that was seen on the outer surface of the coins) is no longer an obstacle to obtaining reliable analyses.

In effect, the external appearance of the "plated" coin led to an unwarranted conclusion about its numismatic origin. It may be that these coins were exposed at one time to salt water which caused chloride corrosion, which on silver coins can appear deceptively like plating[6].Ancient and medieval silver coins very often contain microscopic foci of lead which has segregated from the main alloy, providing points where oxidation can eat at the fabric of a coin.

A BRONZE OF TIGRANES OF ARMENIA

Of the three principal coinage metals copper is by far the most reactive chemically, and is the most likely to have undergone significant adverse change over centuries of exposure to the elements. Corrosion can render ancient copper-based coins nearly unrecognizable, reducing their aesthetic impact and market valuation. In some cases, the

metal develops a surface patina which coats and protects the interior. The chemical makeup of the patina may differ significantly from the internal metal, rendering it difficult to study the original alloy of the coin without penetrating the interior in some fashion.

Occasionally, ancient coins are encountered whose external coating is worn through in a few places revealing shiny metal. Among several bronzes of Tigranes the Great of Armenia (95-56 BC) in my collection is one[7] which has a hard green patina on both faces, but lustrous fresh metal along one edge probably made by accidental damage at the time of discovery. Focusing the electron beam on the green patina would yield an erroneous or misleading analysis, but the accessibility of even a tiny fresh metallic surface made it possible to obtain a relatively reliable analysis of the internal alloy of this coin by SEM-EDS (Table IV).

TABLE IV.

Alloy composition of a bronze of Tigranes II of Armenia (weight percent by SEM-EDS)

Metal	Tigranes II Bronze
Copper	42.69
Lead	48.99
Tin	6.24
Iron	0.24
Aluminum	0.36
Silicon	1.48

The practical importance of this type of study for the coinage of Tigranes is obvious. This is the first chemical analysis to be reported on any ancient Armenian bronze coin. We are poorly informed about the attribution of specific types to their mints, but we know that Tigranes overstruck significant quantities of his coins on Seleucid and Phoenician types[8]. A knowledge of the chemical composition of these coins could provide a key that would enable numismatists to assign mint cities with greater certainty[9].

Surprisingly, the data indicates that the coin contains more lead than copper. In this case, the coinage alloy appears to have consisted of equal parts of lead mixed with copper-tin bronze. While lead was a common constituent of contemporary bronze coins (it tended to lower the melting temperature of the alloy, making it easier to work), the proportion seen here is higher than reported by Nriagu for any of several dozen ancient Greek and Roman coin types[10].

A COPPER COIN OF LEVON III

From California, Mr. Nercessian offered for study a copper-colored takvorin of Levon III of Armenia. This type is only known in silver; except for its copper exterior, the coin had the look and dimensions of a genuine piece. The owner had already attempted a chemical cleaning, and had also placed a couple of slight notches along the edge of the coin, which indicated white metal (silver?) beneath a copper coating. How or why such a piece would have been made was a mystery.

SEM-EDS readings (shown in Table V) were taken on the outer face of the coin (exterior), and at one of the notches (interior). The analytical surprise is that the coin contains substantial amounts of zinc and copper, but almost no silver. The outer surface consists of nearly equal proportions of copper and zinc, while internally the predominant constituent is zinc. At least three possibilities are suggested: (1) the coin is a legitimate

example possibly struck from old brass coin scrap; (2) the piece is a contemporary pattern of counterfeit; (3) the piece is a modern forgery or fabrication. The resolution of this question will require additional specimens for analysis.

TABLE V.

Analysis of a copper takvorin of Levon III of Armenia (weight percent by SEM-EDS)

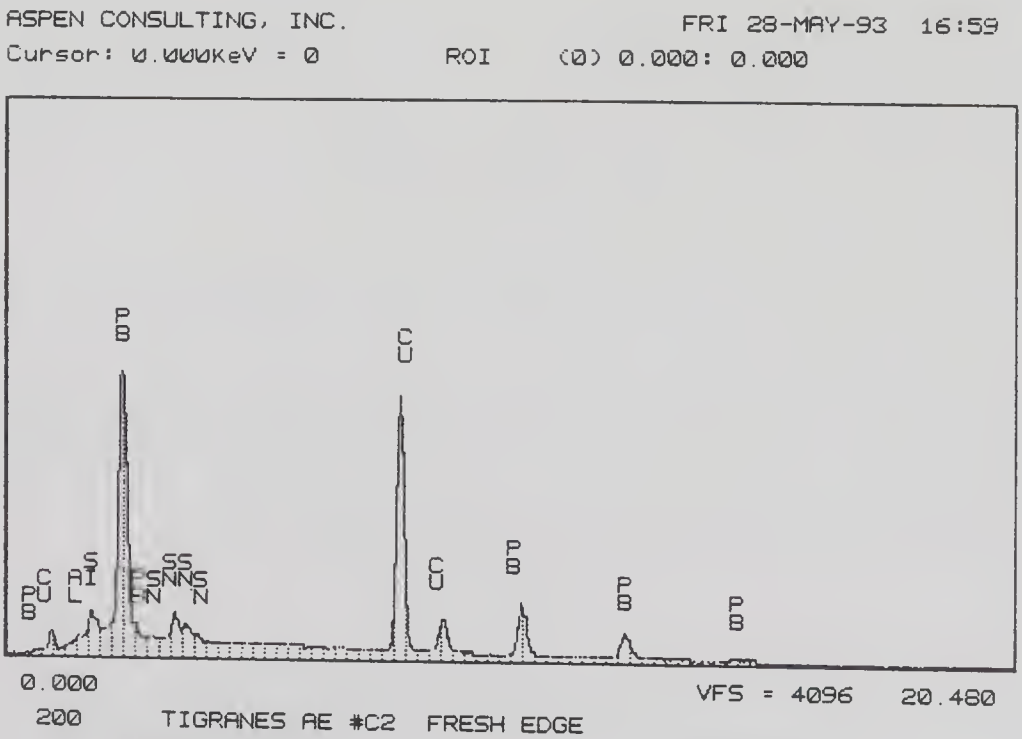
Metal	exterior metal	interior metal
Silver	0.7	0.4
Copper	43.2	12.1
Zinc	47.0	80.5
Lead	4.4	2.2
Aluminum	3.1	3.6
Silicon	0.6	0.4
Iron	0.5	0.6
Chlorine	0.0	0.2
Calcium	0.5	0.0

POTENTIAL OF SEM-EDS ANALYSIS

These studies indicate the potential of non-destructive micro-spectroscopic analysis for ancient and medieval coins of all types, but there is no reason why more modern coins could not be subjected to the same type of testing. SEM-EDS can provide fairly reliable analyses of cleaned metallic artifacts, and those with freshly revealed metal surfaces. If a coin has been adversely affected by corrosion, accurate tests may require partial destruction, but this may not be a serious problem for coins with little commercial value.

What is needed, besides some coins, are specialists who have access to the instrumentation and scientific expertise needed to conduct and interpret the results[11].

SEM-EDS is well established in the field of material science. Its application to numismatic problems is just beginning.



SEM-EDS graphic output of X-ray energies for Tigranes II bronze coin

```
TIGRANES AE #C2  FRESH EDGE
Standardless Analysis
  25.0 kV   35.0 Degrees

Refit _ALK' _ALK"
Refit _SIK' _SIK" _FEK' _FEK" _SNL" _PBL" _PBM"
Chi-sqd = 1.36

Element          Rel. K-ratio          Net Counts
  Al-K    0.00090 +/- 0.00022      292 +/-    73
  Si-K    0.00494 +/- 0.00026     1931 +/-   101
  Fe-K    0.00171 +/- 0.00054      320 +/-   100
  Cu-K    0.31157 +/- 0.00341    39338 +/-   431
  Sn-L    0.02978 +/- 0.00107     5472 +/-   197
  Pb-L    0.28404 +/- 0.00600    12310 +/-   260
  Cu-L    0.06413 +/- 0.00330     2058 +/-   106
  Pb-M    0.30292 +/- 0.00270    52248 +/-   465

ZAF Correction 25.00 kV  35.00 deg
No.of Iterations = 3

Element  K-ratio     Z      A      F      ZAF     Atom%     Wt%
  Al-K     0.001   0.857  3.213  0.995  2.740     1.29     0.36
  Si-K     0.007   0.831  2.479  0.992  2.042     5.10     1.48
  Fe-K     0.003   0.901  1.131  0.935  0.952     0.41     0.24
  Cu-K     0.456   0.908  1.066  0.967  0.937    65.16    42.69
  Sn-L     0.044   1.017  1.415  0.996  1.433     5.10     6.24
  Pb-L     0.416   1.158  1.018  1.000  1.179    22.93    48.99
                                                Total=  100.00%
```

Instrument data output for SEM-EDS analysis of Tigranes II bronze coin

Instrument data output for SEM-EDS analysis of Tigranes II bronze coin

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3. My thanks are due to Robert F. Dragen, President of Aspen Consulting, Inc., without whose generous assistance these studies could not have been conducted. Details of some of the experiments described below were published in three recent articles: L.A. Saryan and R.F. Dragen, "A Microchemical Investigation of Suspected Plating on Thirteenth-Century Armenian Silver Trams," *Armenian Numismatic Journal*, Vol. 20, No. 3 (Sept. 1994), pp. 45-52; Y.T. Nercessian, "Copper-Surfaced Armenian Coins," *Armenian Numismatic Journal*, Vol. 20, No. 3 (Sept. 1994), pp. 53-60; L.A. Saryan, R.F. Dragen and C.A. Hajinian, "Chemical Analysis of Four Medieval Armenian Silver Artifacts," *Armenian Numismatic Journal*, Vol. 20, No. 3 (Sept. 1994), pp. 63-65.

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11. Collectors interested in having their coins studied by SEM-EDS may contact the author in care of this journal.

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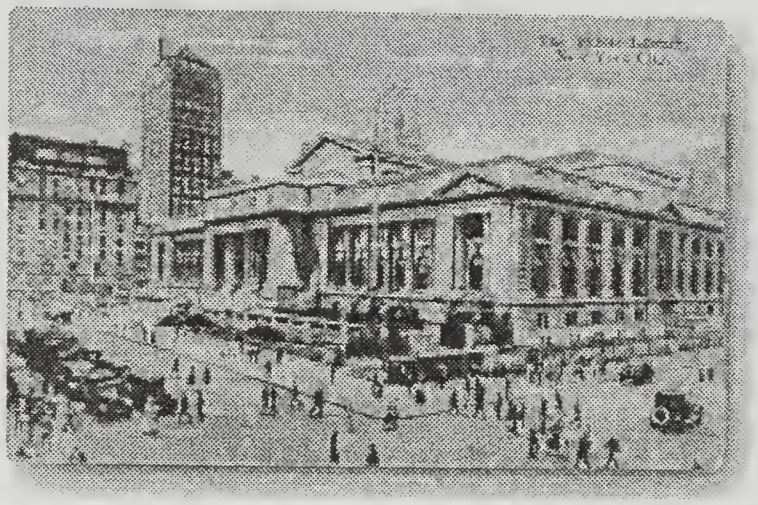

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The Only Gold From The Emerald Isle

by William Shannon, YN

In the 1640s, great turmoil wracked the whole of the British Isles. The English Civil war split the country between supporters of King Charles I — called the Royalists — and the backers of the small-time land owner come Puritan revolutionary Oliver Cromwell, called the Roundheads. While the Roundheads and the Royalists fought over the control of all of England, a rebellion of great significance was happening in Ireland. The Irish, ruled by absentee landlords and oppressed at every turn, revolted against the hated English Protestant ruling class. This caused both sides to muster troops and prepare to fight each other. The mobilization of troops brings up several concerns, one of them being how to pay the troops. This problem was solved, and the solution produced the only gold coinage issued under any authority in Ireland's history: the Inchiquin coinage.

The name "Inchiquin coinage" would seem to suggest that the coinage was issued by Lord Inchiquin, the Vice President of Munster at the time of the Great Rebellion. This is not true, though. How the coins came to be called "Inchiquin coinage" cannot really be said. One of the first places the pieces were called "Inchiquin" came in March of 1741 in the catalog of the auction of Lord Oxford's coin collection in London. Although this term has come to be associated with the pieces, all signs point to the fact that Lord Inchiquin had absolutely nothing to do with the striking of the pieces. Who, then, is responsible for these most interesting pieces?

The answer lies in one of the governing bodies of Ireland at the time. The English, in governing Ireland, established the Lord Justices of Dublin as a governing body for the island. When the Irish rebels rose up against the English government in 1641, it was the Lord Justices who were responsible for the mustering and supplying of troops. They ran into a problem that has plagued the armies of the world since the beginning of warfare: the soldiers have the annoying habit of demanding to be paid for their services. As always in time of war, and in a place where the English never really felt justified in sending new coinage to, there was a shortage of coinage. Actually, shortage was hardly the word. There was nothing with which the soldiers could be paid. The Lord Justices needed a solution, or they could have had a mutiny on their hands.

This solution came in the form of a Warrant from the Lord Justices of Dublin dated July 29, 1646. It ordered that the citizens of Dublin bring any excess gold plate and bullion to the establishment of two goldsmiths, Peter Vaneyndhoven and Gilbert Tongues. It is of interest that Vaneyndhoven and Tongues were two founding members of the Dublin Goldsmith's Company, chartered by King Charles in December of 1637. With the gold of Dublin, these two prominent goldsmiths were to strike "pieces or pledges, the one sort weighing eight peny weight and fourteene graines and the other sorte weighing four peny weight seven graines." These "pieces or pledges" are most certainly the gold coins of the Inchiquin series.

Two varieties of the gold Inchiquin pieces: the pistole and the double pistole as they are called. The pistole is the piece of "four peny weight seven graines" mentioned in the Warrant of July 29, 1646, and the double pistole is the piece of "eight peny weight and fourteene graines." This connection between the pieces and the Warrant are apparent because of the pieces' design, or lack thereof.

The pieces are struck only with the weight of the pieces on both obverse and reverse. This and the fact that they are called "pieces or pledges" in the Warrant show that they weren't royally commissioned pieces and would not bear the likeness, symbols, or titles

of the sovereign. Thus, because they weren't struck pursuant to a direct royal order, they were never legal tender. The pieces struck in 1646 were struck only to testify that they were of a good weight and fineness. The Inchiquin pieces, while struck under the central authority of the Lord Justices, were not coinage of the realm, and acceptance of them for payment was not required. They were truly emergency pieces.

Today, the largest collection of Inchiquin pieces anywhere is at the National Museum of Ireland. While there is no example of the double pistole in the collection, there are seven varieties of the pistole. From a study of the pieces, it was discovered that five different dies were used to strike the pieces. Four of the seven examples were struck with the same pair of dies. In two of the other examples, one of the four aforementioned dies was combined with another die. The last specimen was struck with two completely different dies.

These coins were acquired through different means. Six of the pieces were found at Derryville, Portarlington in the County Laois between 1946 and 1948. The remaining specimen came to the National Museum through the Museum's acquisition of the numismatic collection of the Royal Irish Academy.

The Inchiquin pieces are truly enigmas. They were issued by a local governmental body in a time of great crisis to pay soldiers. They were designated for payment, but they weren't legal tender. These pieces illustrate the turbulence and confusion of the Great Rebellion period in embattled Ireland.

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Smith & Son

by William A. Burd

Frank S. Smith, born in Lithuania on Dec. 16, 1891, came to America at an early age and settled in Wisconsin. In 1920 he moved to Chicago and started a furniture manufacturing business, naming it *Smith & Son*. It appears that at that time he was an avid coin collector and sold part of his holdings to finance his new business. At some later time Frank S. and his son Frank J. began dealing in coins on a part-time basis.

There is no record of Frank S. joining the American Numismatic Association, however, his son joined in March 1938 (Member # 6789). In 1940 Smith & Son ran two full page ads in the ANA Membership Directory. The next one to show up is a full page ad in the *Numismatist* nine years later in June 1949. Full page ads were run thereafter through April 1951 and then half page ads through June 1952.

Back to 1940. The only record of a cataloged sale by Smith & Son is the Dr. August J. Lorenz Collection. It was a mail bid sale on June 29, 1940. It was 71 pages long, consisting of 1143 lots, with photos (of poor quality) scattered throughout. The highlight of the sale would have been a four piece gold Stella set; however, it was withdrawn prior to the sale. Probably sold under private treaty. Other highlights consisted of early U.S. gold, assay pieces, pioneer gold, and a five piece Panama Pacific set, plus others.

Relating to the Stella set, in Q. David Bowers' book *"An Inside View of the Coin Hobby in the 1930s - The Walter P. Nichols File,"* a letter from Frank J. Smith to Nichols is shown on page 135. Nichols apparently was asking about a price on the set and Smith's letter is informing him the set was for sale at $4,000.00. This, no doubt, is the same set withdrawn from their bid sale of several months later. There is no record of Nichols purchasing the set, however.

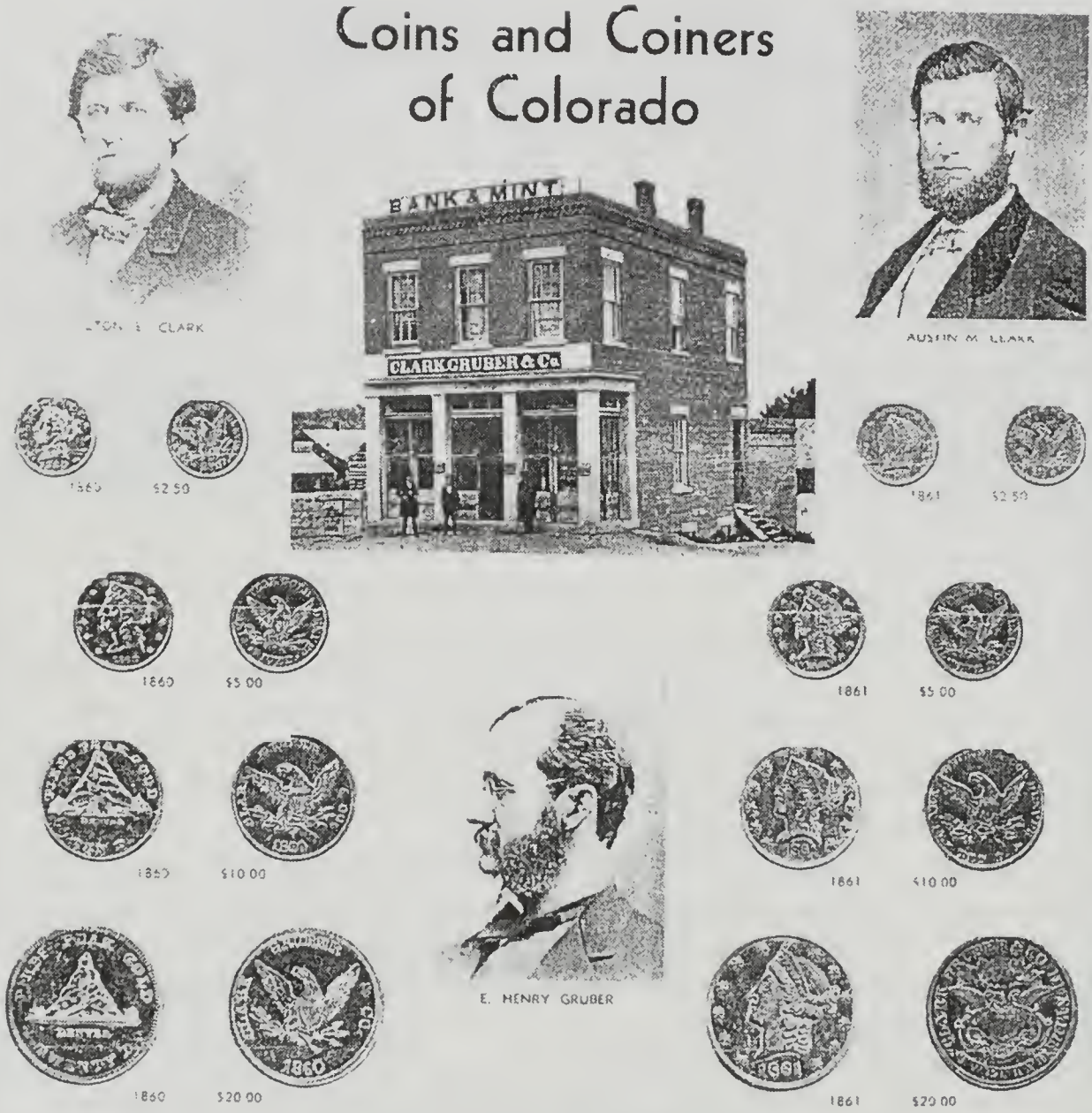
In 1946 Frank S. Smith moved to Wheaton and sold coins and antiques full time. In November 1949 Frank J. ran a half page ad in the *Numismatist* under the company name of "Frank's" with a Chicago address. This is the only indication of a break between father and son. Possibly he broke away for a short while; however, there is no other indication of a separation.

Around 1948 Smith & Son produced a Broadside depicting Clark & Gruber pioneer gold. It was 10" x 11.5" on glossy white paper in black and white with coins in gold. This was no doubt mailed to their customers and potential customers along with their current price list.

Frank Smith's name appears in Cory Gillilland's book *"Sylloge of the United States Holdings in the National Numismatic Collection of the Smithsonian Institution"*; he is listed under "Provenance" page xvii. Brasher's Half Doubloon 1787, of which only one piece is known, was owned by (in this order): David Proskey, FCC Boyd, Col. E.H.R. Green, B.G. Johnson, Frank Smith, E. Arthur Ball, Stack's, Josiah K. Lilly, Jr., National Numismatic Collection.

Frank S. Smith joined the Chicago Coin Club in the latter part of 1950 and was assigned member # R-541. In the annual CCC Bulletin for 1951 Mr. G.R. Ostrander wrote an obituary informing the membership that Frank S. Smith had died on January 26th of a heart ailment. He had been a member for only a few short months.

In 1953 Frank J. Smith moved to Tucson, Arizona. He ran one full page ad in the Numismatist in August of 1953 using his new address and the firm name of "Smith & Son." No other ads appear. He continued to be shown as an ANA member until 1964 after which he was dropped from the rosters.



In conclusion, Smith & Son was a local coin firm who handled many scarce and popular gold coins which caused their name to appear over the years in various publications. This has prompted the question of "Who was Smith & Son?" which this study hopefully has answered.

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OWLS OF THE GOLDEN AGE OF ATHENS

In the fifth century B.C., the city of Athens became the most prosperous and powerful state in Greece. Under their great statesman Pericles, the Athenians built an empire through their leadership of the Delian League, an anti-Persian military alliance. The tetradrachms of Athens, popularly known as "owls" because of their reverse design, are wonderful artifacts of the city's Golden Age. These distinctive silver coins were struck from the wealth that poured into Athens from her own silver mines and from the cities under her rule. Athenian "owls" became the standard currency of the Aegean region. In about 449 B.C., Athens issued a decree directing her subject states to cease coining silver and use Athenian coins in all transactions with the city. The reputation of "owls" as a stable currency was so great that they were used for trade far and wide. Hoards of Athenian tetradrachms have been found from Sicily and Italy in the west to Afghanistan in the east.

The Athenians used the great wealth the city now possessed to rebuild the temples burned down by the Persians in 480 B.C. For this purpose, Pericles appropriated the colossal sum of 5,000 talents (equal to 7,500,000 tetradrachms) from the treasury of the Delian League. The greatest of these temples was the Parthenon, begun in 447 B.C. Under the direction of the sculptor Phidais, the greatest architects and sculptors of the day labored to produce the finest of all Classical Greek buildings. The city's wealth also helped pay for the production of dramas performed as part of the festival of Dionysus, held each spring. The tragedies of Aeschylus, Sophocles, and Euripides, and the comedies of Aristophanes which were written and performed during Athens' Golden Age are still acted today. The city had also become a center of learning.

This was the era of the philosopher Socrates and his star pupil Plato, who, in their search for knowledge and understanding of the human condition, left an enduring legacy. That literature, philosophy, and art should flourish in the city which took its name from the goddess of wisdom, Athena, seems appropriate.

Athens' wealth and power aroused the envy of other Greek states, especially Sparta. In 431 B.C., the great contest between the two city-states and their allies known as the Peloponnesian War began. At the outset of the war, Athens had a reserve of 6,000 talents (9,000,000 tetradrachms) in coined silver lodged in the opisthodomos (treasury) of the Parthenon. However, plague (which took the life of Pericles in 429 B.C.) and ill-conceived military ventures (such as the disastrous campaign of 415-413 B.C. against Syracuse) proved to be the city's undoing. In 404 B.C., she surrendered to Sparta and dismantled her fortifications. Athens would become a power again in the fourth century B.C., but she never regained the dominant position she attained before the Peloponessian War.

Because of what they represent, Athenian "owls" are among the most sought-after of ancient coins. Weighing in at about 17.20 grams each, they are of almost pure silver. On the obverse of these coins is the head of Athena, wearing a crested helmet decorated with three olive leaves and a floral scroll. Although Athena's head is shown in profile, her eye is shown frontally—an archaic feature which may have been retained due to a reluctance to tamper with a recognized symbol of financial stability. On the reverse is Athena's companion, the owl.

According to Greek legend, Athena's owl flew around the world each night to bring back to the goddess news of the day's events. Behind the owl is a sprig of olive (a reference to the city's chief agricultural export, olive oil) and a crescent moon (possibly

commemorating Athens' great naval victory over the Persians at Salamis in 480 B.C., fought during the last quarter of the moon).

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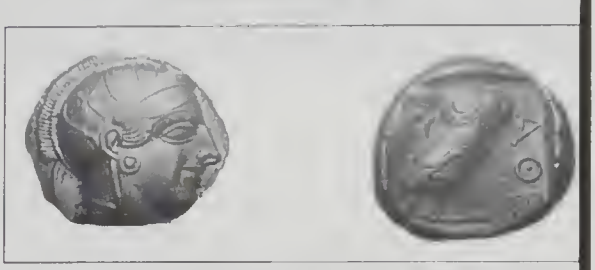
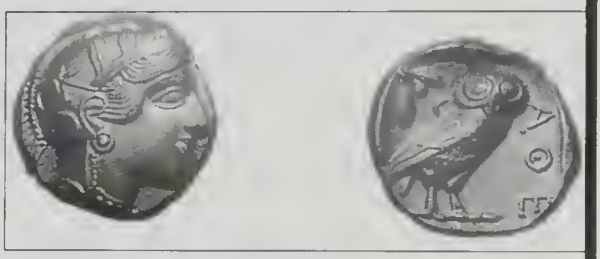
OWLS OF ATHENS, 449-413 B.C.

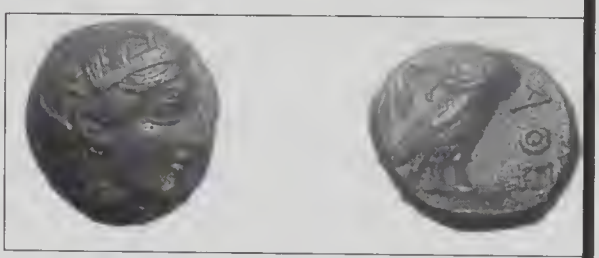


1. AU, nicely cleaned, chin touches edge of flan, however nearly full crest on obv., **rare as such, $900.**

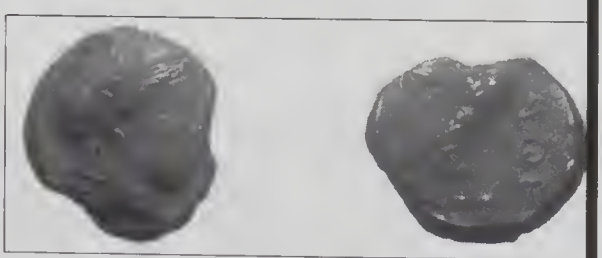


2. AU, nicely cleaned, **$900.**

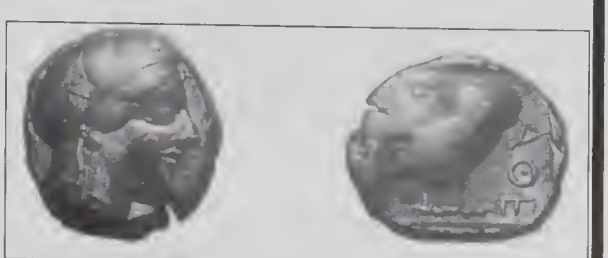
3. AU, nicely cleaned, **$650.**



4. VF, uncleaned, **$425.**



5. Fine, uncleaned, **$325.**



6. F-VF, test cut, **$200.**

LETTERS

Heed membership wishes

Like many of my numismatic brethren, I have been following the Central States Numismatic Society-Professional Numismatists Guild Day saga with some mild degree of interest.

Not having a particularly strong opinion either way on the matter, I was (and still am) watching the CSNS leadership for their decision. I was especially intrigued by the recent membership survey I received and its pending results. I thought to myself, at last a numismatic organization that takes significant decisions directly to the membership. What a novel and welcome idea!

Now the votes have been cast and the polls are closed. Results: nay—436, yea—219. The nays have it. But wait! The winds of influence blow strong. We (i.e., the Board) must review, rethink, maybe even form a committee. Again, what a novel idea. But as I read my recent *Centinel,* I see Secretary Lebo say, "We can't ignore the opposition voiced by two-thirds of the members who took time to return the survey."

Now, while I am not at all in opposition to a PNG Day at Central States shows (as I earlier stated), I am very much opposed to boards going against the wishes of the membership. I think another national numismatic organization is having a similar problem, but that is for another time and place. I digress.

Bottom line: *heed your membership wishes.* It is not always easy to know their wishes. Maybe a survey?

Dennis Garstang
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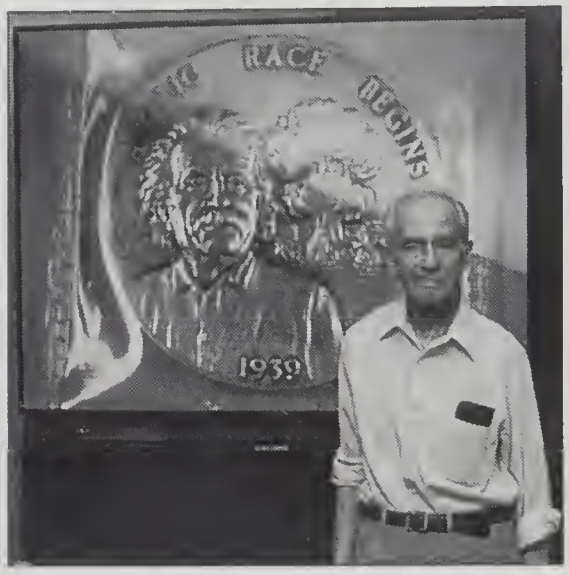
CLUB NEWS

CHICAGO COIN CLUB

Twenty-six members attended the 714th meeting of the Chicago Coin Club which was called to order at 7:30 p.m., June 7, 1995, at the club's new meeting location in downtown Chicago, The First National Bank, 18th floor, on Dearborn, between Madison and Monroe Streets.



Chicago Coin Club, June 1995 Meeting. Harry Flower with his exhibit showing on a 60" television screen through the use of a Canon RE650 Video Visualizer.

One of the features of the facility is a Canon Re-650 Video Visualizer and Document Camera which shows coins on a 60" television screen. The lighting and focus are adjustable, allowing exhibitors and speakers the chance to show even the smallest of coins in exquisite detail to everyone in the room. Since it's a closed circuit system, the lights don't have to be dimmed, nor is there a problem with late-comers walking in front of a projector! The members were quite excited about it and before the evening was over many had availed themselves of this new enhancement.

The highlight of the evening was **Joel Reznick's** surprise presentation of a beautifully engraved desk clock to **William Burd.** Employed by Gold Dust Coins, Mr. Burd played a critical role in the recovery of Reznick's stolen dealer's stock.

Burglars stole Reznick's collection from his hotel room in Elk Grove Village, Illinois while he coordinated the set-up of The National Collectibles Exposition in March. Within twenty-four hours, the collection was brought to Burd at Gold Dust Coins and offered for sale. The sellers claimed they had even more and Burd made an appointment for them to visit the next day. Suspecting the goods were stolen, Burd began to make telephone calls to other coin dealers.

Chicago Coin Club • June 1995 Meeting
William Burd

He was referred to The Collectibles Expo, and when he called, Reznick himself answered the telephone and was relieved to hear that his stock might be recovered. The next day, the burglars showed up for their appointment and to their surprise undercover police officers were waiting. Arrests were made, most was recovered and after being entered for evidence, most was returned to Reznick, the balance being held for litigatory purposes.

As the official club gesture of appreciation, **Carl Wolf** presented Mr. Burd with a suitably engraved 3" medal mounted on a spinner and wooden stand.

The club announced that through the efforts of member Paul Hybert, they're now on the Internet and linked to the American Numismatic Association. To the best of everyone's knowledge, this puts the Chicago Coin Club first among local clubs to venture into this new technology. For those interested, the club's address is:

http://www.ece.iit.edu/staff/PHybert/coins/ccc.html

William Swoger asked for and received the support of the club on a boycott of U.S. commemorative coins until the U.S. Mint Bicentennial Coin Act is passed.

The evening's featured speaker was **Mark Wieclaw** on the subject of elongated coins. He related his years of experience in collected elongates and discussed the debate over defacing and the misconception of illegality, which it is in Canada.

Elongates were born in Chicago at the 1893 Columbian Exposition. Fair visitors would hand over a coin from their pocket and different vendors would elongate them on their machines. One of Wieclaw's goals is to collect a complete set of U.S. de-nominations elongated at the fair. He already has the large and small cent, the two-cent piece, the three-cent, the five-cent Liberty, the Seated Liberty dime and the Barber quarter.

Wieclaw went on to exhibit an elongate die on loan from **Ray Dillard** and he told how dies evolved from hand engraved to acid etched and finally, to photo etched. He showed a rare duel design from the Pan American Exposition, plus an elongated silver dollar, a 1943 steel cent and those issued on the birth of his two children.

Chicago Coin Club, June 1995 Meeting. Mark Wieclaw (Speaker) Collecting Elongated Coins.

For someone interested in learning more about elongated coins, Wieclaw recommended the Ency-clopedia of Modern Elongated Coins and a membership in The Elongated Collectors (T.E.C.).

The evening's eight exhibitors were: **Harry Flower**: a medal of Albert Einstein by the Danbury Mint; **Robert Feiler**: several reprints of bank notes, an obsolete note from Rhode Island, seven unsigned notes from Paterson, NJ, cuff links made from 1876 Seated Liberty quarters, an 1834 5-franc made into a knife and a box coin which opened to a series of beautiful and detailed pictures of California; **Mark Wieclaw**: a simulated stack of 200—$100 bills, a 1922 Peace dollar half-made into a coin ring, a lead counterfeit of a 1965 quarter, and an ancient coin of Antinonis III which he had elongated; **Charles Ricard**: a PGS graded three-dollar gold coin and his recently awarded Numismatist of the Year Award bestowed on him by the Rochester Numismatic Society; **Jeff Rosinia**: a series of U.S. coins showing beautiful toning from blue-purple to rainbow hues; **Robert Leonard**: a Venetian ducat (copper with gold gilt) issued as a trade coin for use in East Africa in the 19th century; **Bill Swoger**: a one-quarter guinea of Great Britain that had been plugged because it circulated as a $1-1/6 in the U.S. during the 18th century; and **Chester Poderski**: the six medals issued during the 1960's by Toivo Johnson commemorating coin designers: St. Gaudens, Brenner, Barber, Gobrecht, Euaenetos, and Longacre-Morgan.

For someone interested in learning more about the Chicago Coin Club, they can write to P.O. Box 2301, Chicago, IL 60690.

ENCASED COIN COLLECTING CLUB STARTING

A new club for encased coin collectors is being started by Wisconsin collector and mail bid dealer Jerry Binsfeld. The club will be educational and non-profit and be devoted to identifying mavericks and expanding the exonumia field of encased coin collecting.

Binsfeld feels there is a need for such a club because the field is popular to many collectors and he thinks there are probably 20,000 to 25,000 plus different encased in existence. A portion of these are mavericks and a organized collector base working together could identify a substantial number.

A quarterly Newsletter/Journal will be published featuring free classified ads and low advertising rates for members. Binsfeld states that the club will provide a base for buying, selling and trading.

Binsfeld also mentioned that the club will meet annually either at the Spring Central States Coin Show or at the annual Chicago's March Collectible Show.

Interested parties should write and send the dues of $7.00 for one year membership to Jerry Binsfeld, Box 191, Pleasant Prairie, Wisconsin 53158.

Checks should be made out to the Encased Coin Collector's Klub (ECCK). Also, would be members should state their encased collecting interests.

Municipal Token Worth $2

Santa Catalina, Calif., issued a nickel-silver municipal $2 token at the end of January.

The token's obverse shows a front view of the Tuna Club with dock and waterfront. The reverse bears a large "2" with "TWO" written across its middle. The token is good for trade with participating vendors on the island during 1995.

Five thousand of these tokens were struck on 39mm milled-edge planchets at a private mint in California.

The token is available for $3 postpaid from Louis Ontek, 2555 Sherman Hoyt Road, P.O. Box 1316, Twenty Nine Palms, CA 92277. A price listing of issues from 1976 to 1994 can be sent free upon request.

Book Review:

Armenian Coins and Their Values
written by Y. T. Nercessian

Los Angeles, Armenian Numismatic Society, 1995, 255 pp. 48 photographic glossy plates, hard bound. $36.50 + shipping (US $2.50, foreign $3.50). (Order from: Armenian Numismatic Society, Mr. W. Gewenian, Treasurer, 8511 Beverly Park Place, Pico Rivera, CA 90660)

I consider this book as a very comprehensive, historical, Armenian numismatic reference. It is truly a labor of love, to have dedicated such an in depth knowledge and information in one volume. There are many partial and fine books on Armenian numismatics, but none that can compare with this edition of Y. T. Nercessian. Very few coinage books span from early B.C. through the medieval times, such as covered by this one volume.

Some of our historical sources have been through the coinages of the nations, and the Armenian history is also recorded by our coins, dating back to the third century before Christ, until the end of the Cilician kingdom, when Armenia was overcome by the Turks. This beautifully bound and printed book is a national treasure, and should be in every Armenian home and coin collector and dealer.

This numismatic manual includes historical background, a catalogue, a guide to rarity, a thorough discussion of counterfeits and grading, a survey and guide of market values as presented in the *Armenian Coins and Their Values*, the latest book of Y. T. Nercessian. Most of the book is devoted to a description of 515 coin types. Periods studied include the Artaxiad dynasty, the Armenian kingdoms of Sophene and Commagene, and Cilician Armenia. Nercessian is also author of several numismatic monographs and more than one hundred studies published in *Armenian Numismatic Journal* which he edits since its inception, 1975.

This authoritative numismatic book will be the basis of investors and collectors of Armenian coins for many years to come, and the purchase of one coin alone will more than offset the cost of this book. Keeping in mind that this handsome book has been published by a very small (Armenian) numismatic society, at a great sacrifice, and the price of the book can never cover the cost of the time and production making it ready for sale. It is a limited production and once they are sold, there will be no more, unless there will be a great demand at a much higher cost. Only the Society's editor and secretary: Yeghia Nercessian's research and dedication made this possible. His tremendous background in linguistics of the legends involved and his many years of research in his publication of the only *Armenian Numismatic Bibliography* with more than 2,000 references to titles with which he has reviewed in detail, has given him the ability to compile into such a volume and gave him the background and expertise which to produce the masterpiece of *Armenian Coins and Their Values.*

LUTHER ESKIJIAN, President
Armenian Numismatic Society

Would You Like To Submit An Article To *The Centinel?*

The Central States Numismatic Society welcomes articles related broadly to numismatic themes. All of the material contributed will be entered in competition for the Elston Bradfield Literary Award for the best article to appear in *The Centinel.*

Articles from contributors less than 18 years old are entered in competition for the Daniel Parker Literary Award.

Articles are to be typed. You may also submit a copy on a disk, identified with the name and version of software used. If disk is submitted, double-spaced printout must accompany disk.

Articles should contain accurate information. Clear photos or drawings to help illustrate your subject can be submitted.

In addition, authors are compensated at a rate of roughly five dollars per 100 words.

If you have a piece you'd like to submit for possible publication, contact the editors — Jim and Karen Jach, P.O. Box 21766, Milwaukee, WI 53221, phone 414/281-4687.

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Show Calendar

Show Chairmen are invited to send announcements of upcoming coin shows in the Central States region. The Show Calendar is intended to assist collectors and dealers in planning their show attendance. It is also designed to aid show sponsors in avoiding date conflicts. Show dates will be listed up to 12 months in advance and show sponsors are encouraged to submit dates for future shows through December, 1996. Please include the city where the show will be held, official name of the show, show dates and location, as well as the name, address and phone number of the show or bourse chairman. Send to Jim or Karen Jach, P.O. Box 21766, Milwaukee, WI 53221.

1995 SHOW CALENDAR

CINCINNATI, OHIO — SEPTEMBER 15-17

Greater Cincinnati Numismatic Exposition 12th Annual Show, Drawbridge Inn and Convention Center (I-75 Exit #186 between Cincinnati and the Airport). Paul Padget, 726 W. Wyoming Avenue, Cincinnati, OH 45215. 513/821-2143; FAX 513/821-3618

LENEXA, KANSAS — SEPTEMBER 16-17

The Johnson County Numismatic Society Coin Show. Lenexa Community Center, Pflumm Road at Santa Fe Trail Drive. Joe Scarlett, 12612 W. 104th Terrace, Overland Park, KS 66215. 913/492-7973

ROCKFORD, ILLINOIS — SEPTEMBER 17

Rockford Area Coin Club Show, Ramada Inn - Hoffman House, 7550 E. State St. Ralph Winquist, 1004 C Street, Rockford, IL 61107.

MILWAUKEE, WISCONSIN — SEPTEMBER 22-24

Milwaukee Numismatic Society 61st Anniversary Show, MECCA Convention Center, 4th and Kilbourn, John Rdzak, P.O. Box 26271, Wauwatosa, WI 53226.

HOMEWOOD, ILLINOIS — SEPTEMBER 29-OCTOBER 1

Illinois Numismatic Association Fall Show & Convention, Best Western Hotel, 17400 S. Halsted (I-80 & Rte. 1 Interchange), Homewood, IL. Kermit Wasmer, 325 Coney Ave., Watseka, IL 60970. 815/432-4636

INDIANAPOLIS, INDIANA — OCTOBER 8, NOVEMBER 12, DECEMBER 10

2nd Sunday Coin & Currency Show Knights of Columbus, 2100 E. 71st St., (1 block west of 71st & Keystone Ave.), Indianapolis, IN. Jennifer Roessler, P.O. Box 20861, Indianapolis, IN 46220. 327/576-9001

LOUISVILLE, KENTUCKY — OCTOBER 13-15

Kentucky State Numismatic Association 35th Annual Coin Show sponsored by the Louisville Coin Club, Executive Inn, 978 Phillips Lane, Louisville, KY 40213. Harry Tileston, P.O. Box 43744, Louisville, KY 40253-0744. 502/244-2555

SALINA, KANSAS — OCTOBER 14-15

Salina Coin Club Show, VFW - 1108 West Crawford. Salina Coin Club, Box 1111, Salina, Kansas 67402.

ROCHESTER, MINNESOTA — OCTOBER 15

Rochester Coin Club's Annual Fall Southern Minnesota Coin Show. Radisson Plaza Hotel, 150 S. Broadway. Jerry Swanson, P.O. Box 565, Rochester, MN 55903. 507/289-5099.

BLOOMINGTON, MINNESOTA — OCTOBER 27-29

Minnesota Organization of Numismatists 33rd Annual Coin Show. Airport Holiday Inn, 3 Appletree Square. Richard Townsend, P.O. Box 726, Rochester, MN 55902. 507/288-0320

KEOKUK, IOWA — NOVEMBER 4-5

Keokuk Coin Club's Fall Coin Show, Keosippi Mall, 300 Main Street, Keokuk, IA 52632. 329/524-7366

KENOSHA, WISCONSIN — NOVEMBER 5

Kenosha Coin Club 37th Annual Show, Holiday Inn, 5125 6th Ave., Kenosha, WI. Jerome Binsfeld, Box 191, Pleasant Prairie, WI 53158. 414/654-6272

MADISON, WISCONSIN — NOVEMBER 19

Madison Fall Coin Show, Holiday Inn – Madison West, 1313 John Q Hammons Dr., Middleton, WI. Len Roosmalen, 702 N. Midvale Blvd. B-10, Madison, WI 53705. 608/233-2118

DEARBORN, MICHIGAN — NOVEMBER 24-26

Michigan State Numismatic Society 40th Annual Fall Convention, Hyatt Regency Hotel, One Fairlane Drive, Dearborn, MI 48126. Don Charters, P.O. Box 85424, Westland, MI 48185. 313/721-4991

MATTOON, ILLINOIS — NOVEMBER 26

Mattoon Coin Club 40th Show, Ramada Inn (formerly Holiday Inn), Route 16 and Interstate 57, Mattoon, IL. (1/2 mile west of exit 190B, Interstate 57.)

1996 SHOW CALENDAR

MUNCIE, INDIANA — JANUARY 21

Muncie Coin Club 39th Annual Coin Show. Ball State University, Student Center-Cardinal Hall, 2200 University Ave. Ray Saylor, P.O. Box 1184, Muncie, IN 47302. 317/288-0371

ROCHESTER, MINNESOTA — FEBRUARY 11

35th Annual Winter Southern Minnesota Coin Show, sponsored by Rochester Coin Club, Radisson Plaza Hotel, 150 S. Broadway. Jerry Swanson, P.O. Box 565, Rochester, MN 55903. 507/289-5099

TROY, MICHIGAN — FEBRUARY 18

Polish American Numismatic Society Show. American Polish Cultural Center, corner of Dequinder and Maple (15 mile Rd.), Troy, MI. Lester Rosik, P.O. Box 556, Warren, MI 48090. 810/977-1738

RACINE, WISCONSIN — FEBRUARY 25

Racine Numismatic Society 58th Annual Coin Show, Racine Marriot Hotel, 7111 W. Washington Ave., (Hwy. 20) Racine, WI. Jerome Binsfeld, Box 191, Pleasant Prairie, WI 53158. 414/654-6272

MINNEAPOLIS, MINNESOTA — MARCH 15-17

Northwest Coin Club 62nd Annual Show, Earle Brown Heritage Center, Brooklyn Center, MN. Lee Quast, P.O. Box 18053, Minneapolis, MN 55418. 612/533-6564

MARION, INDIANA — MARCH 24

Marion Coin Club 38th Annual Show, Grant County 4-H Fairgrounds, State Highway 18 East, Marion, IN. Ray Lockwood, Marion Coin Club, P.O. Box 93, Marion, IN 46952.

CHICAGO, ILLINOIS — MARCH 29-31

Chicago International Coin Fair, Sheraton Chicago Hotel and Towers, 301 East North Water St., Chicago, IL. Kevin Foley, P.O. Box 573, Milwaukee, WI 53201. 414/282-2388

KEOKUK, IOWA — MARCH 30-31

Keokuk Coin Club's Spring Coin Show, Keosippi Mall, 300 Main Street, Keokuk, IA. Tom Gardner, P.O. Box 172, Keokuk, IA 52632. 319/524-7366

MILWAUKEE, WISCONSIN — APRIL 19-21

South Shore Coin Club's 32nd Annual Show, MECCA Convention Center, 4th and Kilbourn, Milwaukee, WI. Annette Tramte, 2369 S. 59th St., West Allis, WI 53219. 414/541-7028

KANSAS CITY, MISSOURI — APRIL 25-28

Central States Numismatic Society's 57th Annual Convention, Bartle Hall Convention Center, 301 West 13th, Kansas City, MO 64105. Ralph Hardman 913/649-5633

MILWAUKEE, WISCONSIN — JUNE 28-30

MidAmerica Coin Convention, MECCA Convention Center, 500 W. Kilbourn Ave., Milwaukee, WI. Kevin Foley, P.O. Box 573, Milwaukee, WI 53201. 414/282-2388

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Jerry Lebo
P.O. Box 44337
Indianapolis, IN 46244

NOTE: The Society year begins on March 1st of each year.

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Central States Numismatic Society Contacts

Have a problem or question with your Central States Numismatic Society Membership?

Here's who to contact to resolve the matter:

Area of Concern:	Person to Contact:
General questions, complaints, and suggestions	Kevin Foley P.O. Box 589 Milwaukee, WI 53201
Convention Coordinator Future Site Selection	Leon Thornton P.O. Box N Eminece, MO 65466
Convention Administration	Paul Padget 716 W. Wyoming Ave. Cincinnati, OH 45215-4529
ANA Scholarship Program for Adults	Roger Winkelhake P.O. Box 6071 Lincoln, NE 68506
ANA Scholarship Program for Young Numismatists	Florence Schook P.O. Box 2014 Livonia, MI 48154
Dues Payment New Membership Application Request for Membership Brochures Membership Cards Failure to receive *The Centinel* Change of Address	Jerry Lebo P.O. Box 44337 Indianapolis, IN 46244 317/889-4253
Letters to the Editors To submit a *Centinel* article Coin Show Calendar Listings News of Local Club Activities Advertising	Jim and Karen Jach P.O. Box 21766 Milwaukee, WI 53221 414/281-4687

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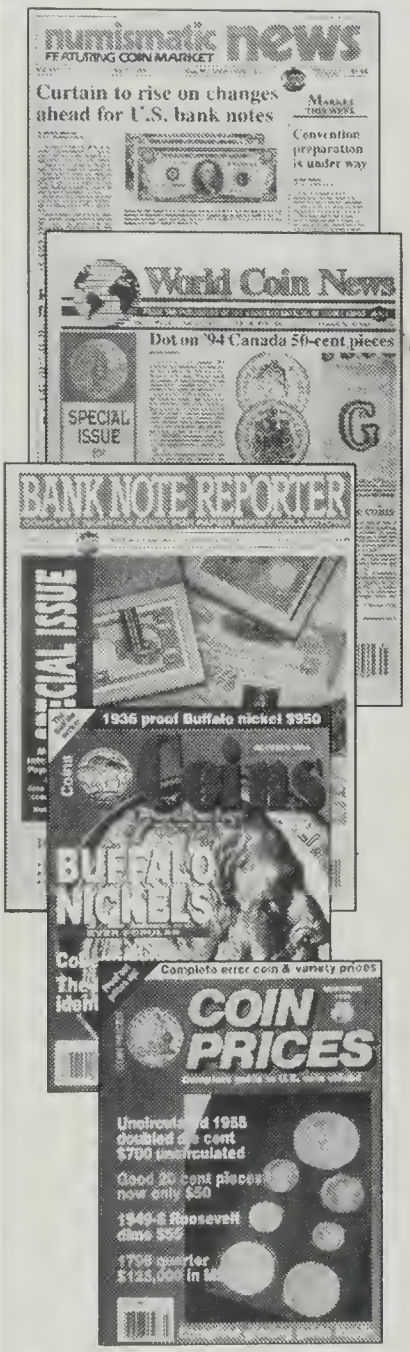

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